

WHAT IS CLAIMED IS:

1. A method for providing bandwidth to access response messages, comprising the steps of:  
2. analyzing an access response message situation;  
3. determining whether said access response message situation meets a predetermined criterion; and  
4. if so,  
5. diverting at least one paging message.

1           2. The method according to Claim 1, wherein said step  
2 of analyzing an access response message situation comprises  
3 the step of determining a number of access response messages  
4 that are awaiting transmission.

1 3. The method according to claim 2, wherein said step  
2 of determining whether said access response message situation  
3 meets a predetermined criterion comprises the step of  
4 determining whether said number exceeds a predetermined  
5 threshold.

1        3.    The method according to Claim 2, wherein said  
2        predetermined threshold comprises five.

1        5.    The method according to Claim 1, wherein said step  
2        of analyzing an access response message situation comprises  
3        the step of determining an age of an oldest access response  
4        message that is awaiting transmission.

1        6.    The method according to Claim 5, wherein said step  
2        of determining whether said access response message situation  
3        meets a predetermined criterion comprises the step of  
4        determining whether said age exceeds a predetermined period  
5        of time.

1        7.    The method according to Claim 6, wherein said  
2        predetermined period of time comprises 1.28 seconds.

1 *Claim 3* 8. The method according to Claim 1, wherein said step  
2 of analyzing an access response message situation comprises  
3 the steps of determining a number of access response messages  
4 that are awaiting transmission and determining an age of an  
5 ~~oldest~~ access response message that is awaiting transmission.

1 *5.* 9. The method according to Claim 1, wherein said step  
2 of diverting at least one paging message comprises the step  
3 of deleting said at least one paging message.

1 *6.* 10. The method according to Claim 1, wherein said step  
2 of diverting at least one paging message comprises the step  
3 of delaying said at least one paging message.

1 *7.* 11. The method according to Claim 10, wherein said step  
2 of delaying said at least one paging message comprises the  
3 step of delaying said at least one paging message until said  
4 access response message situation no longer meets said  
5 predetermined criterion or a predetermined period of time  
6 elapses.

1                   ~~8.~~ 12. The method according to Claim 1, wherein said step  
2 of diverting at least one paging message comprises the step  
3 of diverting a plurality of paging messages according to  
4 respective priority levels of said plurality of paging  
5 messages.

1                   ~~9.~~ 13. The method according to Claim ~~12~~ 12, further  
2 comprising the steps of:  
3                   repeating said steps of analyzing and determining;  
4                   and  
5                   diverting additional paging messages of said  
6 plurality of paging messages, said additional paging messages  
7 associated with a higher priority level.

1 *sub A* 16. The base station according to Claim 15, wherein  
2 said at least one logic module is further configured to  
3 determine whether said number exceeds a predetermined  
4 threshold when determining whether said access response  
5 message situation meets said predetermined criterion.

1 *17.* 17. The base station according to Claim 16, wherein  
2 said predetermined threshold comprises five.

1 18. The base station according to Claim 14, wherein  
2 said at least one logic module is further configured to  
3 determine an age of an oldest access response message that  
4 is awaiting transmission when analyzing said access response  
5 message situation.

1 19. The base station according to Claim 18, wherein  
2 said at least one logic module is further configured to  
3 determine whether said age exceeds a predetermined period of  
4 time when determining whether said access response message  
5 situation meets said predetermined criterion.

1        20. The base station according to Claim 19, wherein  
2        said predetermined period of time comprises 1.28 seconds.

1        21. The base station according to Claim 14, wherein  
2        said at least one logic module is further configured to  
3        determine a number of access response messages that are  
4        awaiting transmission and determine an age of an oldest  
5        access response message that is awaiting transmission when  
6        analyzing said access response message situation.

1        14. 22. The base station according to Claim 14, wherein  
2        said at least one logic module is further configured to  
3        delete said at least one paging message when diverting said  
4        at least one paging message.

1        15. 23. The base station according to Claim 14, wherein  
2        said at least one logic module is further configured to delay  
3        said at least one paging message by storing said at least one  
4        paging message in said memory when diverting said at least  
5        one paging message.

16. <sup>15</sup> 34. The base station according to Claim 23, wherein  
2 said at least one logic module is further configured to delay  
3 said at least one paging message until said access response  
4 message situation no longer meets said predetermined  
5 criterion or a predetermined period of time elapses when  
6 delaying said at least one paging message.

17. <sup>10</sup> 35. The base station according to Claim 14, wherein  
2 said at least one logic module is further configured to  
3 divert a plurality of paging messages according to respective  
4 priority levels of said plurality of paging messages when  
5 diverting said at least one paging message.

18. <sup>11</sup> 36. The base station according to Claim 25, wherein  
2 said at least one logic module is further configured to:  
3 repeat the analysis and the determination; and  
4 divert additional paging messages of said plurality  
5 of paging messages, said additional paging messages  
6 associated with a higher priority level.

1 *Sub P* 27. A method for ensuring that lower priority messages  
2 are provided a minimum bandwidth in a wireless communications  
3 system, comprising the steps of:

4 providing lower priority messages and higher  
5 priority messages that share a given bandwidth;

6 transmitting higher priority messages;

7 determining whether a backlog of lower priority  
8 messages exists;

9 diverting at least one higher priority message  
10 responsive to an affirmative determination that said backlog  
11 of lower priority messages exists;

12 transmitting lower priority messages using  
13 bandwidth freed from said step of diverting.

19  
1 *20* 28. The method according to Claim 27, wherein said  
2 lower priority messages comprise access response messages and  
3 said higher priority messages comprise paging messages.

*SAC* 29. The method according to Claim 27, wherein said step  
1 of determining whether a backlog of lower priority messages  
2 exists comprises at least one of the following steps:  
3         comparing a number of backlogged lower priority  
4 messages to a predetermined overload number; and  
5         comparing an age of an oldest backlogged lower  
6 priority message to a predetermined overload age.

29. 30. The method according to Claim 27, wherein said step  
1 of diverting at least one higher priority message responsive  
2 to an affirmative determination that said backlog of lower  
3 priority messages exists comprises the step of diverting a  
4 plurality of higher priority messages in an order determined  
5 according to a selected priority ranking.

31. The method according to Claim 27, wherein said step  
1 of transmitting lower priority messages using bandwidth freed  
2 from said step of diverting comprises the step of  
3 transmitting a higher priority subset of said lower priority  
4 messages before transmitting a lower priority subset of said  
5 lower priority messages.

14. A base station enabled to provide capacity to  
access response messages, comprising:

3 a transceiver;

4 a processor;

5 a memory; and

6 at least one logic module operatively associated  
7 with said transceiver and interrelated to at least one of  
8 said processor and said memory, said at least one logic  
9 module configured to:

10 analyze an access response message situation;

11 determine whether said access response  
12 message situation meets a predetermined criterion; and

13 if so,

14 divert at least one paging message.

15. The base station according to ~~Claim 14~~, wherein  
2 said at least one logic module is further configured to  
3 determine a number of access response messages that are  
4 awaiting transmission when analyzing said access response  
5 message situation.

1      *Cuts AC*      32. A method for temporarily prioritizing access  
2      response messages over paging messages, comprising the steps  
3      of:  
4                detecting whether a control channel is overloaded  
5                by ascertaining a status of an access response channel;  
6                regulating said control channel by reducing the  
7      bandwidth of said control channel that is consumed by a  
8      paging channel; and  
9                transmitting at least one access response message  
10     on said access response channel.

*Add  
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